

**IN THE CLAIMS:**

1. (Currently Amended) ~~In an SSG-based network, a~~ A method for performing layer 2 authentication of a Mobile Node supporting Mobile IP, comprising:

obtaining layer 2 information including at least one of a MAC address ~~and or~~ a username associated with the Mobile Node;

generating an orphaned host object including the layer 2 information; and

unorphaning the orphaned host object when an IP address associated with the layer 2 information is received such that the unorphaned host object includes the IP address and the layer 2 information, wherein the IP address associated with the layer 2 information is received without performing layer 3 authentication of the Mobile Node, thereby enabling layer 3 policies to be enforced without performing layer 3 authentication of the Mobile Node.

2. (Original) The method as recited in claim 1, further comprising:

obtaining a username associated with the Mobile Node;

wherein the orphaned host object includes the username associated with the Mobile Node.

3. (Original) The method as recited in claim 1, wherein obtaining layer 2 information comprises:

receiving the layer 2 information in an access request packet;

wherein generating the orphaned host object is performed when an access accept packet is received indicating the Mobile Node associated with the layer 2 information has

been authenticated by a AAA server.

4. (Original) The method as recited in claim 1, wherein unorphanning the orphaned host object comprises:

receiving a packet including the IP address and the layer 2 information; and  
updating the orphaned host object to include the IP address, thereby generating an unorphanned host object.

5. (Original) The method as recited in claim 4, wherein receiving a packet including the IP address and the layer 2 information comprises:

receiving an ACCT start packet including the IP address and the layer 2 information.

6. (Original) The method as recited in claim 5, further comprising:

receiving an ACCT stop packet including the IP address; and  
deleting the unorphanned host object when the ACCT stop packet is received.

7. (Original) The method as recited in claim 1, further comprising:  
deleting the unorphanned host object.

8. (Original) The method as recited in claim 7, further comprising:  
receiving an ACCT stop packet including the IP address;  
wherein deleting the unorphanned host object is performed when the ACCT stop

packet is received.

9. (Original) The method as recited in claim 4, wherein the packet including the IP address and layer 2 information further includes an IP address of a network device from which the packet was received, the method further comprising:

maintaining a mapping between the IP address of the network device and the IP address of the Mobile Node such that a mapping of one or more Mobile Nodes supported by the network device is maintained.

10. (Original) The method as recited in claim 9, wherein the packet including the IP address and the layer 2 information is an ACCT start packet.

11. (Original) The method as recited in claim 9, further comprising:

receiving a packet including the IP address of the network device that indicates that the network device is not functioning; and

deleting an unorphaned host object or orphaning a host object for each of the Mobile Nodes supported by the network device.

12. (Original) The method as recited in claim 11, wherein the packet including the IP address of the network device that indicates that the network device is not functioning is an ACCT-OFF packet.

13. (Original) The method as recited in claim 11, wherein the packet including the IP address of the network device that indicates that the network device is not functioning is an ACCT-ON packet.

14. (Currently Amended) A computer-readable medium storing thereon computer-readable instructions for performing layer 2 authentication of a Mobile Node supporting Mobile IP ~~in an SSG-based network~~, comprising:

instructions for obtaining layer 2 information including at least one of a MAC address ~~and~~ or a username associated with the Mobile Node;

instructions for generating an orphaned host object including the layer 2 information;  
and

instructions for unorphaning the orphaned host object when an IP address associated with the layer 2 information is received such that the unorphaned host object includes the IP address and the layer 2 information, wherein the IP address associated with the layer 2 information is received without performing layer 3 authentication of the Mobile Node, thereby enabling layer 3 policies to be enforced without performing layer 3 authentication of the Mobile Node.

15. (Currently Amended) An apparatus for performing layer 2 authentication of a Mobile Node supporting Mobile IP ~~in an SSG-based network~~, comprising:

means for obtaining layer 2 information including at least one of a MAC address ~~and~~ or a username associated with the Mobile Node;

means for generating an orphaned host object including the layer 2 information; and

means for unorphaning the orphaned host object when an IP address associated with the layer 2 information is received such that the unorphaned host object includes the IP

address and the layer 2 information, wherein the IP address associated with the layer 2 information is received without performing layer 3 authentication of the Mobile Node, thereby enabling layer 3 policies to be enforced without performing layer 3 authentication of the Mobile Node.

16. (Currently Amended) An apparatus for performing layer 2 authentication of a Mobile Node supporting Mobile IP ~~in an SSG-based network~~, comprising:

a processor; and

a memory, at least one of the processor ~~and~~ or the memory being adapted for:

obtaining layer 2 information including at least one of a MAC address ~~and~~ or a username associated with the Mobile Node;

generating an orphaned host object including the layer 2 information; and

unorphaning the orphaned host object when an IP address associated with the layer 2 information is received such that the unorphaned host object includes the IP address and the layer 2 information, wherein the IP address associated with the layer 2 information is received without performing layer 3 authentication of the Mobile Node, thereby enabling layer 3 policies to be enforced without performing layer 3 authentication of the Mobile Node.

Please **ADD** new claims as follows:

17. (New) The method as recited in claim 1, further comprising:

enforcing layer 3 policies based upon the layer 2 authentication of the Mobile Node.

18. (New) The method as recited in claim 1, further comprising:

enforcing layer 3 policies without performing layer 3 authentication.

19. (New) The method as recited in claim 1, further comprising:  
enforcing layer 3 policies by accessing the unorphaned host object.
20. (New) The method as recited in claim 1, further comprising:  
enforcing layer 3 policies based upon the IP address of the unorphaned host object.
21. (New) The method as recited in claim 1, wherein the method is performed in an SSG  
based network.